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Letter to the editor

Sarcopenia in acute care patients: Protocol for the European Collaboration of Geriatric Surveys: Sarcopenia 9+ EAMA project

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Summary: Our study will determine the prevalence, incidence, risk factors, and clinical outcomes of acute sarcopenia according to the revised European consensus on definition and diagnosis (EWGSOP2).

Research letter

Sarcopenia in acute care patients: Protocol for the European Collaboration of Geriatric Surveys: Sarcopenia EAMA9+ project

To the Editor:

Sarcopenia is a disease characterized by a progressive loss of skeletal muscle mass and strength, and related to physical impairment, disability, worse clinical outcomes and mortality in all healthcare settings (1). Importantly it is also reversible, with tailored exercise and nutritional support (1)(2). Sarcopenia prevalence varies widely depending on the criteria, measurement methods, and cut-off points used for its assessment (1)(2); to date few studies addressed the issue of sarcopenia in hospitalized older patients, rendering it an under-recognized clinical entity (3)(4). In 2015 the European Geriatric Medicine Society (EuGMS) founded the Special Interest Group on Sarcopenia, which aims to bridge the gaps between clinical practice and research ("Action-Research Philosophy") by promoting collaborations between international scientific societies and institutions, and launching, in 2018, the revised European consensus on the definition and diagnosis on sarcopenia (EWGSOP2) (1).

We **aim** to prospectively evaluate the prevalence and incidence of sarcopenia (as defined by the EWGSOP2 criteria) in hospitalized patients across Europe (Belgium, Denmark, Germany, Italy, the Czech Republic, Poland, Portugal, Spain, and the United Kingdom), to assess risk factors associated with its presence or incidence, and to assess sarcopenia-related adverse clinical outcomes.

Study participants are patients aged ≥70 years admitted to acute medical units. Exclusion criteria are anticipated length of hospital stay <24 hours, and inability to perform the hand-grip test. Each study partner will collect data for first 100 consecutive patients meeting the entry criteria. By including 900 participants we will be able to detect 10% incidence of

sarcopenia with an error of approximately 2% (the exact 95% confidence interval ranging from 8.04 to 11.96%).

Primary outcomes include: 1) Prevalence of sarcopenia on admission (±48h) and 2) Incidence of sarcopenia between admission (±48h) and discharge (±24h). **Secondary outcomes** are: 1) Risk factors for the development of sarcopenia 2) In-hospital sarcopenia associated adverse outcomes (incidence of hospital-acquired infections, falls, delirium, length-of-stay, and mortality), and 3) Post-discharge adverse outcomes (institutionalization, hospital readmissions, falls, disability, and mortality) at 3- and 12-month follow-up.

The new EWGSOP2 sarcopenia diagnostic criteria will be followed (1)(6)(7). These include, assessment of muscle strength with isometric hand-grip test (cut-off points <27kg, men; <16kg, women) (1); gait speed (4-m walk, <0.8m/s) (1), and calf-circumference (<31cm) (1). The SARC-F questionnaire (8) will be used on admission, 3- and 12-month telephone follow-up. We will assess malnutrition (Global Leadership Initiative on Malnutrition (GLIM) criteria) (9)(10), physical frailty (FRAIL scale, Fried phenotype), functional status (Barthel's, basic (ADL), and instrumental (IADL) activities of daily living), and cognition (Mini-Mental State Examination, Confusion Assessment Method, Geriatric Depression Scale).

The study was registered in ClinicalTrials.gov (2018/8355/I) and is being approved by local ethics committees. Data will be treated in accordance with the General Data Protection Regulation of the European Parliament and Council (GDPR 2016/679).

Conclusions and implications: The overall goal is to establish an epidemiological base for future geriatric research in Europe, in the previously largely overlooked area of sarcopenia in older hospitalized patients. Sarcopenia increases with age, especially after the age of 80 years, due to accumulation of both age-dependent and independent risk factors. Inflammaging, inactivity, and malnutrition may play particularly significant roles (1). Sarcopenia can be

prevented, and when developed can be a target for therapeutic actions. However, at present, there is limited knowledge of its prevalence and incidence in a real-world hospital population. The new EWGSOP2 guidelines offer a pragmatic approach which is more applicable to patients in an acute medical setting, and we intend to establish prevalence and incidence data, as well as important insights into risk factors for sarcopenia. We foresee that our results will have crucial implications for future research, clinical practice, and policies for optimal aging.

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Conflicts of interests: All authors declare no conflicts of interest.

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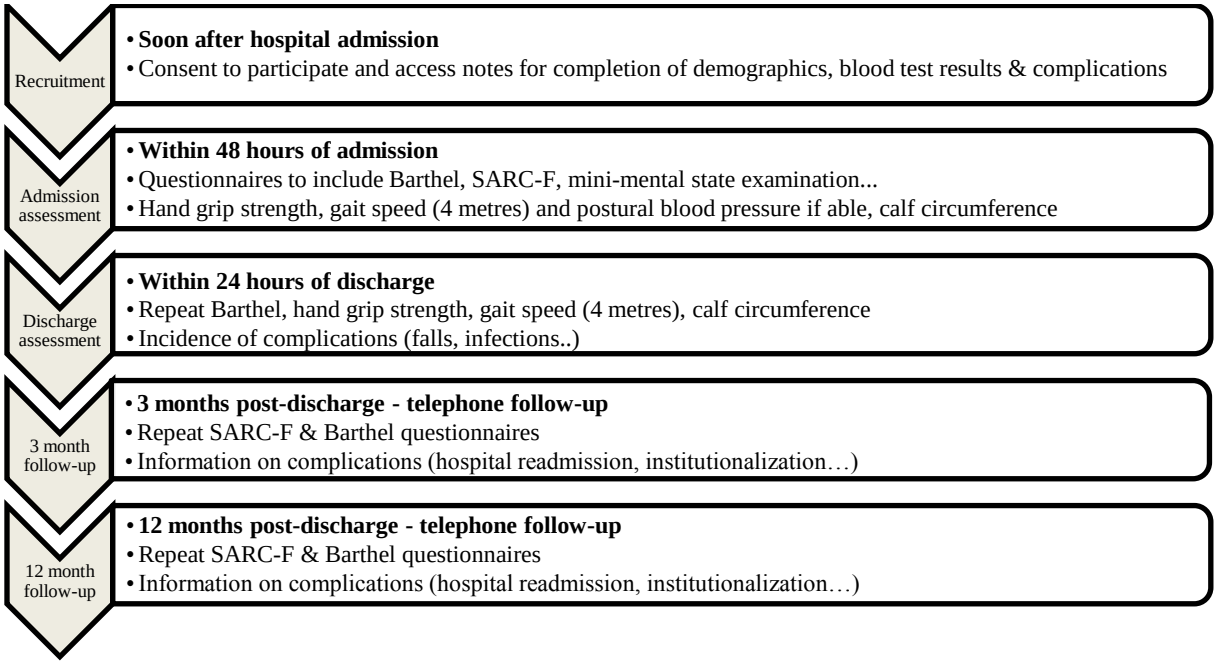
Figure


Recruitment
• Soon after hospital admission
• Consent to participate and access notes for completion of demographics, blood test results & complications
Admission assessment
• Within 48 hours of admission
• Questionnaires to include Barthel, SARC-F, mini-mental state examination...
• Hand grip strength, gait speed (4 metres) and postural blood pressure if able, calf circumference
Discharge assessment
• Within 24 hours of discharge
• Repeat Barthel, hand grip strength, gait speed (4 metres), calf circumference
• Incidence of complications (falls, infections..)
3 month follow-up
• 3 months post-discharge - telephone follow-up
• Repeat SARC-F & Barthel questionnaires
• Information on complications (hospital readmission, institutionalization…)
12 month follow-up
• 12 months post-discharge - telephone follow-up
• Repeat SARC-F & Barthel questionnaires
• Information on complications (hospital readmission, institutionalization…)

Supplementary Material

Click here to download Supplementary Material: Methods appendix_European Collaboration EAMA Sarcopenia 9+ _jg_svh.docx